

# **Adobe License Server Tools**

## **User Guide**

# User Guide

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## Contents

<b>Adobe License Server Tools Overview .....</b>	<b>1</b>
About Adobe License Server Tools.....	1
Understanding the server tools in the context of ALM .....	1
About in-house hosting .....	1
About the components .....	1
Adobe License Server .....	1
Adobe License Server Charging Utility .....	2
Adobe License Server Console .....	2
Bundled utilities .....	2
License Server Tools workflows.....	2
Setting up the in-house hosting environment .....	3
Preparing for installation of desktop products .....	3
Managing the e-licensing system .....	3
 <b>Setting up the in-house hosting environment .....</b>	<b>4</b>
Planning the installation .....	4
Deploying a single server or multiple servers .....	4
Selecting the license server .....	4
Implementing best practices .....	5
Installing and configuring Adobe License Server Tools .....	6
Installing the License Server Tools .....	6
Configuring firewalls .....	7
Configuring the license server .....	8
Charging the server .....	9
Preparing the client setup file .....	9
Downloading the client setup file .....	10
Renaming the client setup file .....	10
Editing the client setup file .....	10
Moving the client setup file .....	11
Installing the desktop application .....	11
 <b>Managing the e-license system .....</b>	<b>12</b>
About overdrafts and the grace period .....	12
Starting and stopping the tools .....	12
System services vs. stand-alone server applications .....	12
Stopping and starting the license server on Windows .....	13
Starting and stopping Adobe License Server on Mac OS X .....	13
Stopping and starting the License Server Console .....	13
Starting and stopping Adobe License Server Charging Utility .....	14

Using Adobe License Server Charging Utility .....	14
Using Adobe License Server Console .....	16
Refreshing data in the console .....	16
User account types .....	17
The License Server Console interface .....	18
Viewing reports .....	18
Working with alerts .....	19
Working with the administrator log files .....	20
Configuring optional server settings .....	21
Viewing server information .....	21
Using the Options file .....	22
<b>Appendix A: Additional Utilities .....</b>	<b>23</b>
Using Imutil .....	23
Supported utilities and arguments .....	23
Utility reference .....	23
Configuration using services .....	26
Using installs.exe .....	26
Working with the Options file .....	27
Editing the Options file .....	27
Understanding Options file syntax .....	27
Specifying license restrictions using type .....	28
Understanding how the Adobe Licenseing Service uses the Options file .....	28
Understanding the rules of precedence in Options files .....	28
Option keyword reference .....	29
<b>Appendix B: Troubleshooting .....</b>	<b>32</b>
General troubleshooting tips .....	32
Use a local log file .....	32
Try lmstat -a and lmdiag .....	32
Be prepared for support questions .....	32
Error code formats .....	32
Format 1 (short) .....	33
Format 2 .....	33
Error code descriptions .....	33
Adobe licensing error code descriptions .....	33
License Server Charging Utility error code descriptions .....	39

# Chapter 1: Adobe License Server Tools Overview

## About Adobe License Server Tools

### License Server Tools and Adobe License Manager

Adobe License Server Tools is a bundle that includes components to configure and manage an in-house license server, as part of the Adobe License Manager (ALM) solution. ALM lets volume customers track and manage electronic licenses (e-licenses) for Adobe desktop products that include the embedded ALM technology. ALM-enabled products must download an e-license from an e-license pool within 30 days of being started for the first time.

With ALM, both the in-house hosting and mixed hosting methods require in-house servers. As a system administrator, you use Adobe License Server Tools to host your pool of e-licenses on an in-house server. For a general overview of ALM technology, see the Adobe Worldwide Licensing Web Site at [www.adobe.com/elicensing](http://www.adobe.com/elicensing).

### About in-house hosting

With in-house hosting, you manage the e-license pool on one or more internal servers. In-house hosting uses a client-server topology. E-licensing activity occurs via TCP/IP communication between the client machines (the machines on which the Adobe ALM-enabled desktop products are used) and the in-house server. With in-house hosting, external communication is required only when you transfer a batch of e-licenses from Adobe to your in-house servers. That transfer happens via a secured internet connection (HTTPS).

## About the components

The Adobe License Server Tools bundle includes three components:

- Adobe License Server
- Adobe License Server Charging Utility
- Adobe License Server Console

Plus two additional utilities:

- `lmutil`
- `installs.exe`

### Adobe License Server

Adobe License Server is the actual server software. The License Server software consists of two binaries. The first is a license server network listener process (`lmgrd.exe` on Windows and `lmgrd` on Mac OS X) that monitors the network for licensing requests. The second file is the Adobe license service that vends e-licenses to Adobe desktop products (`adobe.exe` on Windows and `adobe` on Mac OS X).

The Adobe license service is also referred as the vendor daemon. IT administrators who are comfortable with `lmutil`, a command-line server utility, can use it to administer the Adobe License Server if desired. (See “Using `lmutil`” on page 23.)

Once it is set up and charged, the license server monitors the network and fulfills e-license requests automatically. You use the License Server Console and the License Server Charging Utility components to stop and restart the server, configure it, and maintain it.

## Adobe License Server Charging Utility

You use Adobe License Server Charging Utility (LSCU) to transfer e-licenses from Adobe via the Internet to a secure in-house storage location, the e-license pool. Once you charge the e-license pool, Adobe License Server can access the e-licenses when needed.

The in-house server never communicates with Adobe; instead, LSCU contacts Adobe and charges the e-license pool. By limiting the external communication to LSCU, the license server can function behind your firewall.

LSCU uses a server setup file, which you download from the Adobe Licensing Web Site (LWS), to determine which products to download e-licenses for. You also use LSCU to return e-licenses to Adobe for reuse, check license availability, view your license retrieval history, repair broken licenses, and view the License Server Charging Utility log file.

## Adobe License Server Console

Adobe License Server Console is the interface that you use to manage the e-licensing process in-house. Specifically, you use the License Server Console to configure and maintain your in-house servers, to define filters for your e-licenses, to set up e-license e-mail alerts, and to generate e-license download reports.

## Bundled utilities

The License Server Tools bundle includes two additional utilities that experienced IT administrators can use to work with the server:

**lmutil** A command-line utility that lets you administer the server.

**installs.exe** A command-line utility that lets you configure (install and remove) Adobe License Server as a system service (Windows only).

# License Server Tools workflows

Using the License Server Tools for in-house hosting involves three basic workflows:

- Setting up the in-house hosting environment
- Preparing for installation of Adobe desktop products
- Using the License Server Console and License Server Charging Utility to manage your e-licenses

## About setting up the in-house hosting environment

The first step in setting up the in-house hosting environment is planning the installation: How many servers does your organization need? What are the minimum hardware and software requirements? Reviewing and implementing best practices is also important for ensuring that the in-house hosting system works efficiently.

Next, you install the server tools and set up the server. This involves loading the server setup file, charging the server with e-licenses for the first time, and specifying port and other basic server settings.

For details, see “Planning the installation” on page 4 and “Installing and configuring Adobe License Server Tools” on page 6.

### **About preparing for installation of desktop products**

After setting up the server, you prepare to install the desktop application on client machines by editing the client setup file. The client setup file instructs the ALM-enabled product to download an e-license from the in-house server, and specifies how much of the e-license download process is visible to end users.

For details, see “Preparing the client setup file” on page 9.

### **About managing the e-licensing system**

You use the License Server Console and the License Server Charging Utility in the day-to-day management of your e-licenses. You use these two tools to configure and manage the license server, which is typically running 24/7.

You use the License Server Console to perform a range of administrative actions, from adjusting the server configuration settings to adding users, setting up alerts, and generating reports. As an alternative to the console, you can use the `lmutil` utility for tasks that you may wish to incorporate in your own scripts, such as viewing the server status and stopping the license server.

You use the License Server Charging Utility to periodically download new e-licenses, release unused ones, and to review e-licenses downloaded from Adobe.

For details, see “Managing the E-License System” on page 12.

# Chapter 2: Setting Up the In-House Hosting Environment

## Planning the installation

### Deploying a single server or multiple servers

Depending on your organizational needs and network configuration, you may want to deploy one or more Adobe License Servers. You can deploy multiple servers as long as you prepare a separate client setup file for each server. (ALM does not currently support a server list in a client setup file, concurrent licensing, or license sharing.) When In deciding how many servers you will deploy, you should consider the following factors:

**Network configuration** Consider your network configuration and firewall. For example, if your company has multiple subnets that don't communicate, you should set up a license server on each subnet. Each subnet requires its own client setup file. When the server is outside the firewall, you must set exceptions that allow remote access to the server. If you keep the server behind the firewall, you don't need to set such exceptions. (See "Configuring firewalls" on page 7.)

**Organizational needs** Consider your company's organization and geographical disbursement. Large companies with multiple departments may want to install multiple servers, one for each department. Companies with branch offices can either access a single server located at the corporate office using VPN, or set up an in-house server for each branch. If you have branch offices with separate in-house servers, each branch will require its own client setup file.

### Selecting the license server

To select the server, you should understand the minimum and recommended requirements for the server machine. Choose the right hardware and operating system, depending on your business needs. Identify any OS patches or service packs required.

You also need to know about the resources used by the license server, as well as other server-related issues. Once you understand the requirements and issues, you can choose an appropriate machine for the server.

### Requirements for Windows

Windows servers must meet the following minimum requirements:

- Windows XP Professional SP2 or Windows Server 2003
- Intel Pentium class or equivalent processor
- 512 MB of RAM (1 GB recommended)
- Microsoft Internet Explorer 6.0 or later, or Mozilla FireFox 1.5 or later

### Requirements for Mac OS X

Mac OS X servers must meet the following minimum requirements:

- Mac OS X v.10.4.x
- G4 processor (G5 processor recommended)
- 512 MB of memory (1 GB recommended)
- Apple Safari, Internet Explorer 6.0 or later, or Mozilla FireFox 1.5 or later.

### Resources used by the server

When you select a server machine, you need to take into account the resources used by the server.

**Sockets** When using TCP/IP ports, each ALM-enabled application connected to a license server system uses one or more sockets.

**Disk space** The only output files created by the license server systems are the debug log files. You use the License Server Console to view these log files. If you have a lot of license activity, these log files grow very large. You need to consider where to put these files and how often to rotate and archive them. You can use the License Server Console to suppress log file output if disk space is at a premium. (See “To set the Console Application logging threshold” on page 20.) Log files should be saved as local files on the server machine(s) to avoid networking dependencies.

**Memory** Adobe License Server uses little memory. On a Windows server, the license server daemons (that is, Adobe license service) use 3 MB to 8 MB of memory.

**Network bandwidth** Licensing activity sends relatively small amounts of data across the network. Each transaction, such as activation or deactivation of an e-license, transfers just a few kilobytes of data. This means that licensing can effectively run over slow networks (such as dial-up SLIP lines) for small numbers of clients.

### Using remote mounted disks not recommended

Avoid using remote mounted disks when you run the license server. The `adobe` daemon, the license file, `lmgrd`, and the debug log file should reside on locally mounted disks.

### Implementing best practices

To ensure optimal use of Adobe License Server Tools, adhere to the following practices:

- The server should be on a domain whose fully qualified name can be resolved through a DNS service.
- Define your security requirements (for example, LDAP access, security policy, and so on). Make sure that the operating system has authorized access. Do not share e-license server setup files with other users or machines. Physically secure the hardware.
- Secure network services running on the operating system. Avoid sharing the file systems with other machines on an enterprise network.
- Use a secure file system that can prevent unauthorized access. For example, on Windows 2000 or XP platforms, use NTFS instead of FAT 16 or FAT 32 file systems.
- Limit the number of user accounts on the system. On Windows, disable Guest account access.
- Choose passwords that are difficult to access, and set a policy to periodically change them.
- Enable security auditing for the server machine. Apply security patches and update antivirus software in a timely manner.
- Create a backup plan. Back up the e-license pool periodically. When you back up, shut down the license server first. Also periodically defragment the server to improve disk I/O access.



# Installing and configuring Adobe License Server Tools

## Installing the License Server Tools

After planning the installation and selecting the server hardware, install the License Server Tools on each server machine you will deploy. You can easily uninstall the server tools for hardware upgrades or system maintenance, as necessary.

**Note:** The installer installs Java Runtime Environment 1.4.2.03, which is required by Adobe License Server Console.

When you set up an order for in-house hosting, you were prompted to download the License Server Tools installation file from the Adobe Licensing Web Site (LWS). If you can't locate the downloaded file, you can download it again.

### To download setup files

1 Start your web browser and go to <https://licensing.adobe.com>.

2 For User Type, select one of these options:

**License Holder** If you are an Adobe Open Options (AOO) customer.

**Channel Partner/Internal Adobe** If you are a channel partner or an internal Adobe employee. Select your region from the menu that appears.

3 Enter your login ID and password.

**Note:** If you've forgotten your password, click *Forgot Your Password?* to view your password hint. If you still can't remember your password, click *Resend Login and New Password*. LWS e-mails your login ID and a new password to you.

4 Click Download E-License Setup Files and then follow the on-screen instructions.

### To install the server tools on Windows

1 Unzip the adobelicensesservertools file.

2 Double-click Setup.exe to start the installer.

3 Follow the on-screen instructions to complete the installation.

By default, the License Server Charging Utility starts when installation is complete. If you do not want LSCU to start, deselect the Start LSCU check box on the Finish screen of the installer. (For more information about LSCU, see "Using Adobe License Server Charging Utility" on page 14.)

### To install the server tools on Mac OS X

1 Unzip the adobelicensesservertools file.

2 Mount Adobe License Server Tools.dmg and then double-click Adobe License Server Tool.pkg to start the installer.

3 Follow the on-screen instructions to complete the installation.

4 After installation, a dialog box appears asking if you want to start the License Server Charging Utility. Click Yes or No, as desired. See "Using Adobe License Server Charging Utility" on page 14.

### To uninstall the server tools on Windows

While removing the License Server Tools, the uninstaller checks the e-license pool. If the pool contains e-licenses, a warning appears prompting you to release the e-licenses back to Adobe. If you're uninstalling the tools to upgrade your hard drive or change machines, you should release the e-licenses to prevent losing them. If you're uninstalling the tools to upgrade your monitor or CPU, or in preparation to reinstall the server tools, you don't need to release them.

- 1 Stop the license server if it's running. (See "Starting and stopping the tools" on page 12.)
- 2 Use Add Or Remove Programs in Control Panel to remove the License Server Tools.
- 3 If a warning appears, do one of the following:
  - If you're upgrading your hard drive or changing machines, click Yes to exit the installer, and then use LSCU to release the e-licenses back to Adobe. (See "To release e-licenses back to Adobe" on page 15.) After returning the e-licenses, you can uninstall the tools.
  - If you're upgrading your monitor or CPU or preparing to reinstall the tools, you can click No to the message and continue the uninstall.
- 4 After removal, you'll see the prompt, "Some files could not be removed during Un-installation. Please remove them manually, if required." This relates to the log files. You can now delete the License Server Tools folder and its contents (C:\Program Files\Adobe\License Server Tools).

### To uninstall the server tools on Mac OS X

- 1 Stop the license server and console if they're running. (See "Starting and stopping the tools" on page 12.)
- 2 Use the License Server Charging Utility to check the e-license pool. If it's not empty, release the e-licenses back to Adobe, and then close the utility.
- 3 If desired, back up the log files in the bin folder (\Applications\Adobe\License Server Tools\bin) and log folders (\Library\Logs\Adobe).
- 4 Drag the License Server Tools folder to the trash, and then delete the following files:
  - jradmin.plist in the \Library\LaunchDaemons folder
  - License Server Charging Utility.log in the \Library\Logs\Adobe\ folder

## Configuring firewalls

If you use firewall software, such as Windows Firewall, you should configure it so that Adobe License Server can open the necessary ports. Refer to your firewall documentation for instructions on allowing the processes `adobe.exe` and `lmgrd.exe` to work with the firewall.

### To configure Windows Firewall

On Windows XP, you must configure Windows Firewall to allow access for Adobe License Server. You can configure Windows Firewall in one of two ways:

**During installation** If an alert appears asking you if you want to keep blocking Adobe License Server Service, click Unblock and then follow the on-screen instructions.

**After installation** If Windows Firewall is off during the License Server Tools installation, you can create an exception for the license server using Windows Firewall in Control Panel:

- 1 In Control Panel, open Windows Firewall and then click the Exceptions tab.
- 2 Click Add Program.

- 3 Click Browse, navigate to C:\Program Files\Adobe\License Server Tools\bin, select `lmgrd.exe`, and then click Open. Click OK.
- 4 Repeat steps 2 and 3, adding `adobe.exe` to the exceptions.

## Configuring the license server

Once you've installed the server, you need to configure it to specify necessary information, such as the server port, mail server hosts, scheduling, and several other settings. Use the License Server Console to configure the server. (To configure the optional settings for the server, such as remote shutdown and log settings, see "Configuring optional server settings" on page 21.)

### To configure the license server

- 1 Start your web browser and point it to one of the following locations, depending on where the License Server Console is installed:

**Local machine** `http://localhost:8888/agent/`

**Remote machine** `http://<hostname>:<port>/agent` or `http://<IP_address>:<port>/agent/`

- 2 Enter `admin` for both user name and password; or if you've reset your user name and password, enter the new information. Click Submit.
- 3 Click ADMIN in the upper-right corner.
- 4 On the left side of the Admin page, click License Server Configuration.
- 5 Enter information in the required fields (as described in the following sections) and then click Save.

### Required General settings

**HTTP Port** The HTTP port on which the Adobe License Server Console application listens. This port number is specified during installation. If you change the HTTP port, you must stop and restart the license server using the Stop button at the top of the page.

**Stop Port** The port on which a message is sent to the Jetty web server to stop the License Server Console. This port number is specified during installation. If you change the Stop port, you must stop and restart the license server using the Stop button at the top of the page.

**Session Timeout** When a user is inactive for the number of minutes specified in this field, the License Server Console session will time out. The Sign In panel will appear, prompting the user to enter their user name and password. Note that you can specify a negative value in this field to prevent the application from timing out.

### Required Mail settings

**Outbound Mail Server Host** The name of the machine that hosts the mail server for e-mail sent from the License Server Console.

**Outbound Mail Server Port** The port on which the outbound mail server runs. Set to zero (0) to use the default port.

**"From" Address for Outbound Mail** The e-mail alias that appears in the From field for alert messages that are e-mailed to users.

**Required License Configuration settings**

**Display Name** Specify a friendly name for the license server. This is the name that is displayed on the Adobe Service page.

**License Server Port** Specify the port on which the license server (`lmgrd`) runs. This port is specified during installation.

**Charging the server**

You charge the server by transferring (or retrieving) e-licenses from Adobe to your in-house server using Adobe License Server Charging Utility (LSCU). You must charge the server for each new product order, and as the e-license pool empties. The License Server Console monitors the server and sends e-mail alerts to inform you of low license counts. (See “Working with alerts” on page 19.)

**To load the license server e-license setup file**

LSCU uses the e-license server setup file to determine which products to download e-licenses for. You were prompted to download the server setup file when you set up your order on LWS. If you can't locate the downloaded file, you can download it again. See “To download setup files” on page 6.

- 1 Start the License Server Charging Utility and click the Retrieve tab.
- 2 Click Browse For File. Locate the server setup file and click Open.

**To retrieve e-licenses from Adobe**

You must download e-licenses from Adobe to your in-house license server to make them available for use. The in-house server does not communicate with Adobe; LSCU contacts Adobe and then downloads e-licenses to the server.

- 1 After you've loaded the license server setup file, on the Retrieve tab, select the product you want to retrieve e-license for.
- 2 Specify a number for Requested Quantity and then click Retrieve.

**Preparing the client setup file**

The client setup file instructs the desktop application to download its e-license from the in-house server. It also specifies the LicenseDownload setting, which determines how much of the e-license download process the end user sees.

The name of the downloaded setup file includes product information. The naming convention helps you distinguish between files when you've downloaded setup files for several different products. For example, Acrobat-8.0-ALL-PS-LOC.xml designates a setup file for Adobe Acrobat 8.0. The last three letters before the extension designate the type of hosting method: LOC for in-house hosting and REM for Adobe hosting.

You must download, rename, edit, and move the client setup file prior to installing ALM-enabled desktop products.

**Note:** If you do not prepare the client setup file, you can still install and start the desktop application. On initial start, however, a 30-day grace period begins.

## Downloading the client setup file

You were prompted to download the client setup file when you set up your order on LWS. If you can't locate the file, you can download it again. See "To download setup files" on page 6.

## Renaming the client setup file

In order for the desktop application installer to locate the setup file, rename it to `adobeconfig.xml`.

## Editing the client setup file

You edit the client setup file to specify the path to the e-license pool on the server, and to determine how visible the e-license download process is to users. If you're using multiple servers, you must create a separate setup file for each server.

### To edit the client setup file

- 1 Open `adobeconfig.xml` in a text editing application, such as Notepad (Windows) or TextEdit (Mac OS X).

```
-->
<AdobeConfigVersion>1.1</AdobeConfigVersion>
- <!--
    ** BEGIN of Customer Editable Section: User Preferences
    *****

    LicenseDownloadOptions: specify whether the end-user will see the license download
                           dialogs and options or not. Configurable by the customer.

    Values:
    - Verbose: the user sees the "Download e-License" dialog.
    - SilentLicenseDownload: the application attempts to download an e-license
      without displaying any message to the user. The application displays a
      message in case of errors and allows the user to initiate a grace period.
    - AllSilent: the application attempts to download an e-license
      without displaying any message to the user. The application does not
      display any messages to the user and initiates the grace period silently.
    Warning: The user will only gets a message when the grace period expires.

    LicenseServers: specify one or more in-house license servers setup by the customer.
                   This option MUST be completed in preparation for the deployment of
                   the Adobe application to the end-users' machines.
    Instructions (to be completed for every license server in your organization):
    1. Type a description for your in-house Adobe License Server.
    2. Enter the Server URL for your in-house server using the format
       <PortNumber>@<ServerURL> where,
       PortNumber: is the port your server is listening for requests
       ServerURL:  is the fully qualified URL of your server

-->
- <UserPreferences>
  <LicenseDownloadOptions>Verbose</LicenseDownloadOptions>
</UserPreferences>
- <LicenseServers>
  - <Server>
    <Description>In-House License Server</Description>
    <ServerURL>port@host</ServerURL>
  </Server>
</LicenseServers>
- <!--
    ** END of Customer Editable Section
    *****
```

*The editable portion of `adobeconfig.xml`*

- 2 Choose one of the following LicenseDownload options:

**Verbose** The user sees the Download E-License dialog box.

**SilentLicenseDownload** The application attempts to download an e-license without displaying any message. In case of an error, the application displays a message and allows the user to initiate a grace period.

**AllSilent** The application attempts to download an e-license without displaying any message. In case of an error, the application does not display a message to the user and initiates the grace period silently.

**Note:** With the AllSilent option, the user receives a message only when the grace period expires.

**3** In the `LicenseServers` line, specify the path to the in-house license server. The format is `port@hostname` or `port@ipaddress` (for example, `8000@mymachine.testdomain.com` or `8000@192.168.0.1`). If you want to use the default port range specified for license servers, 27000 to 27009, you can drop the port number (for example, `@mymachine.testdomain.com` or `@192.168.0.10`).

***Note:** In order to communicate with the license server, the host name must use ASCII characters. If your host is not named using ASCII characters, use the IP address option.*

### Moving the client setup file

After renaming and editing the client setup file, you must move it to the same directory as the installation files. When you install the desktop software, the installer copies `adobeconfig.xml` to the product folder. The first time it is started, the desktop product locates `adobeconfig.xml` in the product folder and uses it to download an e-license.

### Installing the desktop application

After preparing the setup files and charging the server, you can deploy the desktop application using whatever deployment tool you wish. ALM works with standard deployment methods, including manual installation, installations from a file server, and deployment using a software distribution tool.

# Chapter 3: Managing the E-License System

Once the in-house server is up and running, you need to manage and maintain it. This includes tasks such as recharging the server with additional e-licenses, stopping and starting the server, releasing e-licenses back to Adobe, and viewing reports. Scheduled maintenance, such as backing up logs and monitoring available license levels, is recommended. The License Server Console also monitors the server status, sending e-mail alerts to notify you of low license count and other situations. (You can purchase additional e-licenses through your regular channel.)

## Starting and stopping the tools

You can stop and start the License Server Tools when necessary—for example, when performing hardware maintenance. Although you can start and stop the tools, the License Server and the License Server Console typically run 24/7.

### System services vs. stand-alone server applications

System services (Windows) or startup services (Mac OS X) start automatically when the computer is booted, and run continuously until the system is shut down or the services are manually stopped. Stand-alone server applications must be started and stopped manually. Further, working with system services requires Administrator rights to the server machine, while using stand-alone applications typically requires only User rights. Most servers run as a system service (Windows) or a startup service (Mac OS X).

By default, Adobe License Server and License Server Console are installed as system services on Windows and the License Server Console is installed as a startup service on Mac OS X. On Mac OS X, Adobe License Server runs as a stand-alone server application and must be started manually, either through the License Server Console or using the shell scripts provided.

The License Server Charging Utility (LSCU) installs as a stand-alone application on both platforms. You start LSCU only when you need to charge the server or perform other LSCU-specific tasks.

### Stopping and starting the license server on Windows

By default, Adobe License Server and Adobe License Server Console are installed as system services and are therefore always running. When you run Adobe License Server as a system service, you can stop and restart it in one of the following ways:

- Using the services panel (recommended)
- Using the License Server Console
- Using the batch scripts in the bin folder
- Using `lmutil`

When you run the server as a stand-alone application, you can stop and restart the server by using the License Server Console, the batch scripts, or `lmutil`.

**Note:** If you stop and restart Adobe License Server or License Server Console using any method other than the services panel, it will restart as a stand-alone server until you reboot the system.

**To start or stop Adobe License Server on Windows**

- ❖ Using the services panel: Choose Start > Run. Enter `services.msc` in the Open field, and then click OK. Select Adobe License Server from the list that appears and then click Stop or Restart.
- ❖ Using License Server Console: From the Admin page, click Adobe Licensing Service and then click Start Service or Stop Service. (See “The License Server Console interface” on page 18.)
- ❖ Using batch scripts: Navigate to C:\Program Files\Adobe\License Server Tools\bin and then double-click `adobe_license_server_start.bat` or `adobe_license_server_stop.bat`.
- ❖ Using `lmutil`: See “Using `lmutil`” on page 23.

**Starting and stopping Adobe License Server on Mac OS X**

The License Server runs as a stand-alone server application on Mac OS X and must be started manually, either through the License Server Console or using the shell scripts provided.

**To start or stop Adobe License Server on Mac OS X**

- ❖ Using the License Server Console: Navigate to the Adobe License Server page of the Admin tab, and then click Start Service or Stop Service. (See “The License Server Console interface” on page 18.)
- ❖ Using shell scripts: Open a terminal shell and execute the `adobe_license_server_start.sh` or `adobe_license_server_stop.sh` script located in the \Application\Adobe\LicenseServerTools\bin folder.

**Stopping and starting the License Server Console**

The License Server Console is installed as a system service on Windows, and as a startup service on Mac OS X. As either a system or startup service, the console starts on boot and is available 24/7. You can stop and restart the console as required.

**Note:** If you want to run the server or console as a stand-alone application, you must first stop it, and then restart it using a method other than the services panel.

You access Adobe License Server Console using your web browser. For instructions on logging into the console, see “To log into Adobe License Server Console” on page 16.

**To stop or start Adobe License Server Console on Windows**

- ❖ Using the services panel (recommended): Choose Start > Run. Enter `services.msc` in the Open field, and then click OK. Select FLEXnet Junior Administrator from the list that appears, and then click Stop or Restart.
- ❖ Using batch scripts: Open a command prompt and execute `flexnet.bat` or `flexnet.stop` located in the C:\Program Files\Adobe\License Server Tools\jradmin folder.

**Note:** If you stop and restart the License Server Console using any method other than the services panel, it will restart as a stand-alone application until you reboot the system.

**To stop or start Adobe License Server Console on Mac OS X**

When you run the console as either a startup service or a stand-alone application, you can stop and restart it using a shell script in the Terminal window.

- ❖ Open a terminal shell and execute `flexnet start` or `flexnet stop` located in the /Applications/Adobe/License Server Tools\jr admin folder.



## Starting and stopping Adobe License Server Charging Utility

The License Server Charging Utility (LSCU) is a stand-alone utility. You start and stop it manually, as necessary.

### To start and stop LSCU

- ❖ To start LSCU, choose Start > All Programs > Adobe > License Server Tools > License Server Charging Utility (Windows) or double-click its icon in Applications/Adobe/License Server Tools (Mac OS X).
- ❖ To stop LSCU, close its window, or click Quit in the bottom-left corner.

## Using Adobe License Server Charging Utility

Unlike the License Server and License Server Console, which typically run 24/7, the License Server Charging Utility (LSCU) is run only when needed. You use LSCU to do the following:

- Check available e-licenses
- Download e-licenses to your local server
- Release e-licenses by uploading them back to Adobe
- View licensing details
- Modify proxy settings
- View a log that provides relevant system messages

**Note:** LSCU requires the license server setup file when downloading e-licenses. See “To load the license server e-license setup file” on page 9.

### About overdrafts and the grace period

Adobe desktop applications must download an e-license within 30 days after being started for the first time. If access to the in-house server is not immediately available, a 30-day grace period can be initiated (at the user’s discretion) allowing temporary use of the software.

Adobe also provides overdrafts, which are temporary e-licenses that allow the desktop software to function for a limited time. When a desktop application requests an e-license and none are available on the server, the server issues an overdraft (as long as there are overdrafts available). When the server issues an overdraft, it also sends you an e-mail informing you of the situation. (See “Working with alerts” on page 19.)

### About broken e-licenses

Hardware failures and software issues can corrupt e-licenses. LSCU identifies any broken e-licenses during start-up and attempts to fix them. It displays a message letting you know that it repaired e-licenses. If it can't repair an e-license, it notifies you that the repair failed and instructs you to call Adobe Customer Service for further assistance.

### To check e-license availability

You can use LSCU to quickly check on the number of e-licenses you have left at Adobe for particular products.

- 1 Start LSCU.
- 2 On the Retrieve tab, click the Check Available E-licenses button to refresh the screen and confirm there are enough available e-licenses.

If you need more e-licenses, you can purchase them through your regular channel. (See “About overdrafts and the grace period” on page 14.)

## Charging the server

You must periodically charge the in-house server by transferring e-licenses from Adobe. See “To retrieve e-licenses from Adobe” on page 9.

### To review your e-license retrieval history

The retrieval history provides details about e-licenses downloaded for a specified product. The Retrieval Details table displays a colored flag for each record.

1 Start LSCU.

2 On the Review tab, select the product ID you want to see the details for. The details for the selected product appear in the table at the bottom of the screen.

**Green flag** Indicates available e-licenses.

**Yellow flag** Indicates disabled e-licenses. You can return them, and then retrieve them again.

**Red flag** Indicates broken e-licenses. You must restart the License Server Charging Utility to repair the e-licenses.

### To release e-licenses back to Adobe

You can release e-licenses back to Adobe for reuse.

1 Start LSCU.

2 On the Review tab, select the product with the e-licenses you want to release.

3 In the Retrieval Details table that appears, select the fulfillment record that has the e-licenses you want to release.

4 Click Release.

**Note:** If the Release button is inactive, the selected e-licenses are broken and cannot be returned to Adobe.

### To use the License Server Charging Utility log file

The License Server Charging Utility includes a log file that contains system messages and other details regarding LSCU usage. You can view the log, back it up to start a new log, and specify the location LSCU writes the log file to.

1 Start LSCU.

2 Do any of the following:

- To view the log file, click the Log tab.
- To back up the log file, click Backup Log. LSCU backs up the log file and displays the path to it in the new log.
- To specify a location for the log file on Windows, enter the path in the server.ini file located at C:\Program Files\Adobe\License Server Tools\bin\LMResources. (The default location is C:\Documents and Settings\All Users\Application Data\Adobe\License Server Charging Utility.)
- To specify a location for the log file on Mac OS, enter the path in the license server charging utility file located at Applications\Adobe\License Server Tools\bin\.. (The default location is /Library/Logs/Adobe.)

**To modify LSCU proxy settings**

By default, LSCU uses the system's proxy settings configured for HTTPS. If no proxy settings exist, LSCU uses direct communication with Adobe. If desired, you can change the proxy settings to either force direct communication (even though a proxy exists) or to use a different proxy.

- 1 Start LSCU.
- 2 Click the Help tab, and then click Modify Proxy Settings.
- 3 Enter the new proxy settings. Make sure to enter authentication information if required.

**Note:** *The Autodetect Proxy setting works well in most situations, although it does not currently support WPAD (Proxy URL).*

## Using Adobe License Server Console

Adobe License Server Console is a web portal that lets you administer your in-house license server. You can use the License Server Console to:

- Configure and maintain your in-house servers
- Define filters for your e-licenses
- Set up e-license e-mail alerts
- Generate e-license download reports

**To log into Adobe License Server Console**

- 1 Start your web browser and point it to one of the following locations, depending on where the console is installed:

**Note:** *If the Section 508 Accessibility Option is enabled, you can append that port information to the end of the URL: `http://<hostname>/<port>/<agent>/index508.html`. See “To add users” on page 17 for information about enabling the Accessibility Option.*

**Local machine** `http://localhost:8888/agent/`

**Remote machine** `http://<hostname>:<port>/agent` or `http://<IP_address>:<port>/agent/`.

- 2 Enter `admin` for both user name and password; or if you've reset your user name and password, enter the new information. Click Submit.

**Refreshing data in the console**

License usage information is not displayed in real time. The default refresh rate of the console—the time it takes for server status and information to update in the console—is five minutes. You can change the refresh rate.

**To specify how often data should be refreshed**

- 1 Log into Adobe License Server Console.
- 2 Click License Server Configuration on the Admin page.
- 3 In the Scheduling section, specify how often you want Adobe License Server Console to update license server status and reread license files.

**Automatic Status Updates** Select this option to automatically update the license usage information displayed in Adobe License Server Console at the interval selected from the Refresh License Server Status menu. Note that the shorter the update interval, the more impact the automatic status updates may have on the overall performance of Adobe License Server Console.

**Automatic License File Rereads** Select this option to automatically reread all licenses on the license server at the interval selected from the Reread Licenses menu.

## Managing user accounts

The Users section of the Admin page displays a list of the License Server Console users and their roles. Using this page, you can add and delete users and edit user information.

There are three types of user accounts: Read Only, Full Privileges, and Root.

### Read Only user account

Users with a Read Only account type can access the Dashboard to view license activity, but cannot access functions on the Admin tab. Read Only users can:

- Receive e-mailed alerts and view alerts in the Alerts pane of the Dashboard. However, they cannot dismiss alerts.
- View license activity and host information on the Dashboard, but cannot access fulfillment information.
- Change their own password using the Users page.

### Full Privileges user account

Users with Full Privileges can access information displayed on the Dashboard and Admin pages, and can configure Admin functionality. A user with Full Privileges can be deleted by the Root user and by other users with Full Privileges. Full Privileges users can:

- View all Adobe License Server Console information and use all functionality.
- Create, edit, and delete other users who have Read Only or Full Privileges account types. However, they cannot edit or delete the Root user.

### Root user account

This user account type is installed with the License Server Console application; there is only one user of this type. This user has all of the privileges included with the Full Privileges account type. In addition, the Root user:

- Cannot be deleted.
- Can change passwords.

### To add users

- 1 Click Admin in the upper-right corner of the console to access the Admin page.
- 2 Click Users on the Admin tab.
- 3 Click New to display the User Detail section.
- 4 Enter information in all required fields. Note that a user name can be no more than 60 characters in length.
- 5 Select Email Alerts to send enabled alerts to the e-mail address specified in the User Name field. Alerts are e-mailed to users as they are triggered.

**6** To enable accessibility for visually impaired users, select Section 508 Accessibility. For users with this option selected, the interface will be displayed with black font and graphics on a white background. In addition, JavaScript and AJAX will be removed.

**7** Click Create.

#### **To delete users**

**1** Click Admin in the upper-right corner of the console to access the Admin page.

**2** Click Users on the Admin tab.

**3** Select the user you wish to delete, and then click the Delete button.

#### **To edit a user's profile**

**1** Click Admin in the upper-right corner of the console to access the Admin page.

**2** Click Users on the Admin tab.

**3** Select the check box in front of the user name to display the User Detail section.

**4** Edit the information and click Update.

## **The License Server Console interface**

The License Server Console includes the Dashboard page and the Admin page.

### **Dashboard page**

The Dashboard can be used by any user, and appears when a user logs into the License Server Console. The Dashboard displays alert messages and a summary of e-license usage by product. Use the Dashboard to review and dismiss alerts, as well as to access detailed e-licensing data. The Dashboard includes two panes:

**Alerts pane** Displays critical and warning alerts triggered when specified events take place—for example, when usage thresholds are met, or when the Adobe license service is down. At the top of the Alerts pane, you can see at a glance how many critical and warning alerts have been triggered. (See “Working with alerts” on page 19.)

**Licenses pane** Displays the total e-license usage by product version—providing both a ratio of licenses used to the number of per-seat e-license counts on all fulfillment records in the license server's license pool, and the number of remaining overdraft licenses that are available.

### **Admin page**

The Admin screen can be used by Full Privileges or Root users. Use the Admin page to set user settings, specify alerts, configure the license server, and access Adobe services.

## **Viewing reports**

You can get a detailed view of license usage information by using the Licenses pane in the Dashboard.

### **To view e-license usage details**

**1** In the Licenses pane, click a product name to expand or contract the list of products by version. The following information is displayed:

**Total** A ratio of used per-seat e-licenses to total per-seat e-licenses available to your enterprise. When a Total ratio is displayed in yellow, this indicates that usage of a license is either at or near a specified usage threshold.

**Overdraft** A ratio of used overdraft licenses to the total number of overdraft licenses issued to your enterprise. This represents the sum of overdraft counts on all fulfillment records in the license server's license pool.

- 2 To view additional information for a product or version, click it in the License pane. When you click a product, host information for that product appears.
- 3 To view a list of host machines using the license, click the Hosts link. The License Server Console displays the hosts along with the fulfillment record IDs, the license type (Per-seat or Overdraft), and the license expiration date.
- 4 To view information contained in the fulfillment order, click the Fulfillments link. The fulfillment ID, quantity, expiration, and type of license appear in a table (sorted by ID).

#### To export e-license data to a file

You can export e-license data to a file. Exporting e-license data to a file is useful, for example, if you need to add it to a document or create a report.

- ❖ In the Licenses pane, click Export Data. License usage data is exported to a comma-delimited text file.

## Working with alerts

Use the Alerts page to specify which alerts you want to enable and to indicate how you want users in your enterprise to be notified when alerts are triggered. You also use this page to dismiss alerts.

***Note:** Only users with the Administrator role (Full Privileges or Root user account type) can define and dismiss alerts.*

You can specify where to send an alert in the following situations:

**Low e-License** The specified percentage of total e- licenses is reached for a product and version.

**Out of e-Licenses** The number of available e-licenses reaches zero for a product and version.

**Out of overdraft licenses** The Available Overdraft Licenses count reaches zero for a product and version.

**Overdraft license issued** An overdraft license is issued by the license server for a product and version.

**Adobe License Service down** Either the `lmgrd` or the Adobe license service is down. Note that this alert is triggered regardless of whether the license server has gone down unexpectedly or if it was purposely stopped.

#### To define an alert

- 1 On the left side of the Admin page, click Alerts.
- 2 In the Send Alerts To column, check where to send the alert for each of the alert situations:

**Dashboard** Sends the alert to the Alerts pane of the Dashboard page.

**Email** Sends the alert to all Adobe License Server Console users who have the Receive Email Alerts option selected in their user profiles.

#### To dismiss an alert

An alert is displayed in the Alerts pane until it is dismissed. Only users with the Administrator role can dismiss alerts.

- ❖ In the Alerts pane, click the X to the right of the alert.

**To configure e-mail alerts**

- 1 On the left side of the Admin page, click Configure License Server.
- 2 In the Mail section, specify the following configuration information to enable Adobe License Server Console to send e-mail alerts (to users whose profiles are configured to receive e-mailed alerts):

**Outbound SMTP Server Host\*** The name of the machine that hosts the mail server for e-mail sent from Adobe License Server Console.

**Outbound SMTP Server Port\*** The port on which the outbound mail server runs. Set to zero (0) to use the default port.

**Outbound Mail Logging Detail** Level of detail about outbound mail written to the License Server Console log file.

**Outbound Mail Account** E-mail account to use for mail sent from the License Server Console.

**Outbound Mail Password** Password to use with the Outbound Mail Account.

**"From" Address for Outbound Mail\*** The e-mail alias that appears in the From field for alert messages that are e-mailed to users.

*Note: Fields with an asterisk are required.*

**Working with the administrator log files**

The Debug log and the Console Application log provide details about Adobe License Server and License Server Console activity. You can set the logging threshold for the Console Application log, and you can download both logs.

**To view the Console Application log**

- 1 On the left side of the Admin page, click License Server Configuration.
- 2 To view the Console Application log in a separate window, click View Application Log.
- 3 To download the file, click Download.

**To set the Console Application logging threshold**

The logging threshold is the maximum level of detail for messages written to the Console Application log file. Only messages at or below the selected level of detail will be written to the log file.

- 1 On the left side of the Admin page, click License Server Configuration.

- 2 In the Application Logging Threshold section, select the desired level of detail:

**Debug messages** Provides the most information, including all of the following details.

**Informational messages** Provides relevant messages, and warnings, and errors, but does not include debug messages.

**Warning** Records warnings and errors only.

**Error** Records only error messages.

**To view the Debug log**

- 1 On the left side of the Admin page, click Adobe Licensing Service.
- 2 Click View Debug Log to view the server's Debug log in a separate window. From this window, you can navigate through the Debug log, as well as download and save the Debug log to a different location.

**To configure the Debug logs**

1 On the left side of the Admin page, click License Server Configuration.

2 Set the following options in the Debug Logging section:

**Enable Debug Logging** Debug logging is enabled by default. Deselect it if you do not wish to use the Debug log.

**Append to existing debug log** Select to append a new Debug log to an existing Debug log file. If this option is not selected, the new Debug log overwrites the existing Debug log file.

**Debug Log Location** Specify the fully qualified filename to which the license server's Debug log will be written. You must have the appropriate permissions to write to this location.

**Configuring optional server settings**

In addition to the required configuration settings (see “Configuring the license server” on page 8), there are several optional settings you can specify or change for the server, as appropriate.

**To reread license files**

This is useful in cases when you have added new licenses, edited licenses, or edited vendor options files.

1 On the left side of the Admin page, click License Server Configuration.

2 Click Reread to reread all license files and Adobe license service options files on the license server.

**To allow remote shutdown**

You can shut down the license server from a remote location.

❖ On the Admin tab, click License Server Configuration, and then select Allow Remote Shutdowns.

**To specify a path for the license file**

1 On the Admin tab, click License Server Configuration.

2 In the License File section, specify the fully qualified path to your enterprise's license files or to the directory containing those files.

*Note: Adobe License Server Console does not validate the syntax of the license files.*

**Viewing server information**

You can also view server information on the Admin page.

**To view server information**

1 On the left side of the Admin page, click Adobe Licensing Service.

2 Review the following fields:

**Daemon Name** Name of the vendor daemon serving the licenses—for example, `adobe`. Click Download Product Mappings File to access additional information about the Adobe license service.

**License Server** Friendly name of the license server.

**Status** Indicates whether the Adobe license service is up or down.

**Adobe Solution Based On FLEXnet Licensing Version** The version of FLEXnet Licensing used in the Adobe license service solution.



## Using the options file

The options file controls various operating parameters of Adobe license service. The License Server Console lets you view and upload the options file. Advanced users can edit the options file directly, and then upload the new version. For more information, see “Working with the options file” on page 27.

### To view the options file

- 1 On the Admin page, click Adobe Licensing Service.
- 2 Click View Options File.

### To upload the options file

- 1 On the Admin page, click Adobe Licensing Service.
- 2 Click Browse and then locate and select the desired options file.
- 3 Click Upload to upload the file.

**Note:** Adobe License Server Console does not validate syntax in the options file.

# Appendix A: Additional Utilities

## Using lmutil

If you choose, you can use `lmutil` as an alternative server administration utility. You can use `lmutil` in your own scripts (batch, shell, and perl) to track server status. All `lmutil` arguments, such as `lmdown`, must be preceded by `lmutil` in the prompt.

### Supported utilities and arguments

ALM supports the following `lmutil` utilities:

Utility	Description
<code>lmdown</code>	Gracefully shuts down selected license daemons (both <code>lmgrd</code> and all vendor daemons) on the license server machine (or on all three machines in the case of three-server redundant servers).
<code>lmpath</code>	Allows users direct control over license file path settings.
<code>lmreread</code>	Causes the license daemon to reread the license file and start any new vendor daemons.
<code>lmstat</code>	Displays the status of a license server system.
<code>lmswitchr</code>	Switches the report log to a new filename.
<code>lmver</code>	Reports the FLEXnet Licensing version of a library or binary file.

**Note:** In this section, “vendor daemon” refers to the *adobe* daemon.

ALM supports the following universal arguments for `lmutil` utilities:

Argument	Description
<code>-help</code>	Displays usage information and exits.
<code>-v</code>	Displays the Adobe Licensing version of the utility and exits.
<code>-verbose</code>	Displays longer description for all errors found.

### Utility reference

#### lmdown

The `lmdown` utility allows for the graceful shutdown of selected license daemons (both `lmgrd` and selected vendor daemons) on all machines.

Usage is:

```
lmdown -c license_file_list [-vendor vendor_daemon] [-q] [-all] [-force]
```

where:

<code>-c license_file_list</code>	Use the specified license file(s). Note that specifying <code>-c license_file_list</code> is always recommended with <code>lmdown</code> .
<code>-vendor vendor_daemon</code>	<code>lmutil -c adobe.lic -vendor adobe</code> shuts down the adobe vendor daemon. <code>lmgrd</code> continues running.
<code>-q</code>	Don't prompt or print a header. Otherwise <code>lmdown</code> asks "Are you sure? [y/n]: "
<code>-all</code>	If multiple servers are specified, automatically shuts down all of them. <code>-q</code> is implied with <code>-all</code> .
<code>-force</code>	If licenses are borrowed, <code>lmdown</code> runs only from the machine where the license server system is running, and then only if the user adds <code>-force</code> .

If `lmdown` encounters more than one server (for example if `-c` specifies a directory with many `*.lic` files) and `-all` is not specified, a choice of license server systems to shut down is presented.

**Note:** On Mac OS X, do not use `kill -9` to shut down license server systems. On Windows, if you must use the Task Manager to kill the Adobe license service, be sure to end the `lmgrd` process first, and then the `adobe` process (or all the vendor daemon processes).

You can protect the unauthorized execution of `lmdown` when you start up the license server manager, `lmgrd`.

For more information, see "lmreread" on page 24.

### lmreread

The `lmreread` utility causes the license server manager to reread the license file and start any new vendor daemons that have been added. (For example, `adobe.exe` is a vendor daemon invoked by the parent daemon, `lmgrd`. Other third-party vendors can also use the underlying FLEXnet technology.) In addition, all currently running vendor daemons are signaled to reread the license file and their end-user options files for changes in feature licensing information or option settings. If report logging is enabled, any report log data still in the vendor daemon's internal data buffer is flushed. `lmreread` recognizes changes to server machine host names, but cannot be used to change server TCP/IP port numbers.

If the optional vendor daemon name (`adobe` in this instance) is specified, only the named daemon rereads the license file and its end-user options file (in this case, `lmgrd` does not reread the license file).

Usage is:

```
lmreread [-c license_file_list] [-vendor vendor] [-all]
```

where:

<code>-c license_file_list</code>	Use the specified license file(s).
<code>-vendor vendor</code>	Only vendor daemon <code>vendor</code> rereads the license file and its options file. Additionally, <code>lmgrd</code> restarts <code>vendor</code> if necessary.
<code>-all</code>	If more than one <code>lmgrd</code> is specified, instructs all <code>lmgrds</code> to reread.

**Note:** If you use the `-c license_file_list` option, the license file(s) specified are read by `lmreread`, not by `lmgrd`; `lmgrd` rereads the file it read originally.

You can protect the unauthorized execution of `lmreread` when you start up the license server manager, `lmgrd`.

**lmstat**

The `lmstat` utility helps you monitor whether or not a daemon is running.

Usage is:

```
lmstat [-a] [-c license_file_list] [-f [feature]] [-i [feature]] [-s [server]] [-S [vendor]]
[-t timeout_value]
```

where:

<code>-all</code>	If more than one <code>lmgrd</code> is specified, instructs all <code>lmgrds</code> to reread.
<code>-a</code>	Displays all information.

**lmswitch**

The `lmswitch` utility switches the debug log file written by a particular vendor daemon by closing the existing debug log for that vendor daemon and starting a new debug log for that vendor daemon with a new filename. It also starts a new debug log file written by that vendor daemon if one does not already exist.

Usage is:

```
lmswitch [-c license_file_list] vendor new_debug_log
```

where:

<code>-c license_file_list</code>	Use the specified license file(s).
<code>vendor</code>	Vendor daemon in this license file.
<code>new_debug_log</code>	Path to new debug log file.

By default, debug log output from `lmgrd` and all vendor daemons started by that `lmgrd` get written to the same debug file. `lmswitch` allows companies to keep separate log files for different vendors and control the size of their debug log file.

```
lmutil lmswitch -c adobe.lic adobe adobenew.log
```

tells the adobe daemon to switch to a new log file named `adobenew.log`.

**Note:** If you configured your server as a system service, `lmutil lmswitch` switches the name for the current session only. When the system service restarts, it creates a log using the name specified in the arguments.

If debug log output is not already directed to a separate file for this vendor daemon, `lmswitch` tells the vendor daemon to start writing its debug log output to a file, `new_debug_log`. If this vendor daemon is already writing to its own debug log, `lmswitch` tells the vendor daemon to close its current debug log file and start writing its debug log output to `new_debug_log`.

**Note:** The effect of `lmswitch` continues only until the vendor daemon is shut down or its options file is reread via `lmreread`. When the vendor daemon is restarted or its options file is reread, it looks for a `DEBUGLOG` line in the options file to determine whether or not to write its debug log output into its own file and, if so, what file to write.

For more information, see “`lmreread`” on page 24.

**lmver**

The `lmver` utility reports the Adobe Licensing version of a library or binary file.

Usage is:

```
lmver filename
```

where `filename` is one of the following:

- the name of an executable file built with Adobe Licensing
- `lmgrd`
- a license administration tool
- a vendor daemon

For example, if you have an application called `lscu.exe`, type:

```
lmver lscu.exe
```

## Using installs.exe

`installs.exe` is command-line utility that removes the server if it exists as a system service. Advanced users may use `installs.exe` to install and remove Adobe License Server as a system service. The `installs.exe` utility is located at `C:\Program Files\Adobe\License Server Tools\bin`.

Usage is:

```
installs -c license_file_path \
-e lmgrd_location \
-l log_file_path \
-n service_name \
[-k lmgrd parameters]
```

To remove `lmgrd` as a service:

```
installs -r -n service_name
```

Where:

<code>-e lmgrd_location</code>	Location of <code>lmgrd.exe</code> on your system. Path names with embedded spaces need to be enclosed in double quotes.
<code>-c license_file_path</code>	Location of the license file. Path names with embedded spaces need to be enclosed in double quotes.
<code>-l log_file_path</code>	Location for the debug log file. Path names with embedded spaces need to be enclosed in double quotes. The default location for the debug log file when <code>lmgrd</code> is started as a service is the <code>c:\winnt\System32</code> folder. To specify a different location, make sure you specify a fully qualified path.
<code>-n service_name</code>	The service name (in our case the name is "Adobe License Server"). If not specified, FLEXlm License Manager is used by default. Service names with embedded spaces need to be enclosed in double quotes.
<code>-k lmgrd parameters</code>	Used to pass additional command line arguments to <code>lmgrd</code> each time it is started as a service. A string of parameters with embedded spaces needs to be enclosed in double quotes. One or more of the following can be specified: <ul style="list-style-type: none"> <li>• <code>-local</code> Restricts the <code>lmdown</code> command to be run only from the same machine where <code>lmgrd</code> is running.</li> <li>• <code>-x lmdown</code> Disables the <code>lmdown</code> command (no user can run <code>lmdown</code>).</li> <li>• <code>-x lmremove</code> Disables the <code>lmremove</code> command (no user can run <code>lmremove</code>).</li> </ul>
<code>-r</code>	Remove <code>service_name</code> service.

## Working with the options file

The options file allows you to control various operating parameters of Adobe license service. Users are identified by their user name, host name, display, and IP address. Options files allow you to be as secure or open with e-licenses as you like. Using the options file, you can do the following:

- Allow activation of e-licenses in a specific fulfillment record
- Deny activation of e-licenses in a specific fulfillment record
- Restrict the number of e-licenses available

### Editing the options file

The License Server Tools installer adds a blank options file that you can edit. The blank options file, `adobe.opt`, is located in the folder `Program Files/Adobe/License Server Tools/bin` (Windows), and `Applications/Adobe/License Server Tools/bin` (Mac OS). Use a text editing application such as Notepad (Windows) or TextEdit (Mac OS) to edit the file.

### Options file syntax

Adobe license service supports the following option keywords:

Option keyword	Description
DEBUGLOG	Writes debug log information for this vendor daemon to the specified file.
EXCLUDE_ENTITLEMENT	Denies a user the ability to activate licenses held in a fulfillment record in the e-license pool.
GROUP	Defines a group of users for use with any options.
GROUPCASEINSENSITIVE	Sets case sensitivity for user and host lists specified in <code>group</code> and <code>host_group</code> keywords.
HOST_GROUP	Defines a group of hosts for use with any options (version 4.0 or later).
INCLUDE_ENTITLEMENT	Allows a user to activate licenses held in a fulfillment record in the e-license pool.
NOLOG	Turns off logging of certain items in the debug log file.
RESERVE	Reserves e-licenses for a user or group of users/hosts.

Limit lines in the options files to 2048 characters. Use the forward slash character (/) as a continuation character in options file lines. You can specify comments in an options file by starting the line with the number sign (#).

### Specifying license restrictions using type

Some option keywords restrict who may use licenses or where licenses may be used. These options take a type argument that specifies what the restriction is based on.

When you use the option keywords `EXCLUDE_ENTITLEMENT`, `INCLUDE_ENTITLEMENT`, `MAX`, and `RESERVE`, you can use the following values can be used for type:

**User** User name of the user executing the ALM-enabled application. User names are case-sensitive.

**Host** Machine host name or IP address where the application is executing. Host names are case-sensitive. The IP address can contain wildcard characters.

The types listed above take a singular member.

## How the Adobe license service uses the options file

When the vendor daemon is started by `lmgrd`, the vendor daemon reads its options file. There is only one options file per vendor daemon and each vendor daemon needs its own options file. For any changes in an options file to take effect, the vendor daemon must read its options file. You can use License Server Console or the `lmreread` utility to force a daemon to reread its options file.

## About rules of precedence in options files

Rules of precedence take effect when INCLUDE and EXCLUDE statements are combined in the same options file and control access to fulfillment records (in the e-license pool). The following define the precedence when both types of statements appear together:

- If there is only an EXCLUDE list, everyone who is not on the list is allowed to use the e-license.
- If there is only an INCLUDE list, only those users on the list are allowed to use the e-license.
- If neither list exists, everyone is allowed to use the feature.
- The EXCLUDE list is checked before the INCLUDE list; someone who is on both lists is not allowed to use the e-license.

Once you create an INCLUDE or EXCLUDE list, everyone else is implicitly outside the group. This feature allows you, as an administrator, the ability to control licenses without having to explicitly list each user to whom you wish to allow or deny access. In other words, you can choose one of two approaches:

- Give most users access and list only the exceptions.
- Severely limit access and list only the those users that have access privileges.

## Option keyword reference

### DEBUGLOG

`DEBUGLOG` `[+]` `debug_log_path`

Specifies a location for the debug log output from the vendor daemon associated with this options file. Preceding the `debug_log_path` with a `+` character appends logging entries; otherwise, the file is overwritten each time the daemon is started. Note that this affects output from only the vendor daemon associated with this options file. The debug log output of `lmgrd` and any other vendor daemons in the same license file is not captured in this file.

On Windows, pathnames that include spaces have to be enclosed in double quotes. If `lmgrd` is started as a service, the default location for the report log file is the `ProgramFiles/Adobe/License Server Tools/bin` folder (Windows) or `Applications/Adobe/License Server Tools/bin` (Mac OS).

### EXCLUDE\_ENTITLEMENT

This option applies only to licenses held in trusted storage and supplied using activation.

`EXCLUDE_ENTITLEMENT` `entitlementId` `type` `{name | group_name}`

Excludes a user, host, or predefined group of users or hosts from the list of who is allowed to activate the licenses contained in a fulfillment record held in trusted storage. `EXCLUDE_ENTITLEMENT` supersedes `INCLUDE_ENTITLEMENT`. Conflicts between the `EXCLUDE_ENTITLEMENT` list and the `INCLUDE_ENTITLEMENT` list are resolved by the `EXCLUDE_ENTITLEMENT` taking precedence.

Term	Description
<code>entitlementId</code>	The entitlement ID used when requesting a license activation.
<code>type</code>	One of the <code>USER</code> , <code>HOST</code> , <code>GROUP</code> , or <code>HOST_GROUP</code> . See “Specifying license restrictions using type” on page 27.
<code>name</code>	Name of an item of type <code>type</code> for which license usage is excluded.
<code>group_name</code>	Name of the group to exclude.

*EXCLUDE\_ENTITLEMENT terms*

To exclude the user `pete` from the list of users able to activate licenses provided in the fulfillment record specified by the entitlement ID “AB456”:

```
EXCLUDE_ENTITLEMENT AB456 USER pete
```

## GROUP

```
GROUP group_name user_list
```

Defines a group of users for use in `INCLUDE`, `INCLUDEALL`, `INCLUDE_ENTITLEMENT`, `EXCLUDE`, `EXCLUDEALL`, `EXCLUDE_ENTITLEMENT`, and `RESERVE` option lines.

Term	Description
<code>group_name</code>	Name of the group being defined. Group names are case-sensitive.
<code>user_list</code>	List of user names in that group. Names are case-sensitive. Set the <code>GROUPCASEINSENSITIVE</code> options file keyword to turn on case insensitivity.

*GROUP terms*

Multiple `GROUP` lines for the same group name add all the specified users into the group.

To define the group `Hackers` consisting of `bob`, `howard`, and `james`:

```
GROUP Hackers bob howard james
```

**Note:** `USER_GROUP` is an alias for `GROUP`.

## GROUPCASEINSENSITIVE

```
GROUPCASEINSENSITIVE OFF|ON
```

If set to `ON`, user names and host names that are specified with the options file `GROUP` and `HOST_GROUP` keywords, respectively, are treated as case-insensitive.

By default, `GROUPCASEINSENSITIVE` is `OFF`, and user names and host names are treated as case-sensitive.



## HOST\_GROUP

HOST\_GROUP group\_name host\_list

Defines a group of hosts for use in INCLUDE, INCLUDEALL, INCLUDE\_ENTITLEMENT, EXCLUDE, EXCLUDEALL, EXCLUDE\_ENTITLEMENT, and RESERVE option lines. Multiple HOST\_GROUP lines add all the specified hosts into the group.

Term	Description
group_name	Name of the group being defined. Group names are case-sensitive.
host_list	List of host names in that group. Names are case-sensitive. Set the GROUPCASEINSENSITIVE options file keyword to turn on case insensitivity.

*GROUP terms*

To define the host group Pacific consisting of Tokyo, Seattle, and Auckland:

```
HOST_GROUP Pacific tokyo seattle auckland
```

Anywhere a host name can be used in an options file, an IP address can be used instead.

## INCLUDE\_ENTITLEMENT

This option applies only to licenses held in trusted storage.

INCLUDE\_ENTITLEMENT entitlementId type {name | group\_name}

Includes a user or predefined group of users in the list of who is allowed to activate the licenses contained in a fulfillment record held in trusted storage.

EXCLUDE\_ENTITLEMENT supersedes INCLUDE\_ENTITLEMENT. Conflicts between the EXCLUDE\_ENTITLEMENT list and the INCLUDE\_ENTITLEMENT list are resolved by the EXCLUDE\_ENTITLEMENT taking precedence.

Term	Definition
entitlementId	The entitlement ID used when requesting a license activation.
type	One of the USER, HOST, GROUP, or HOST_GROUP. See “Specifying license restrictions using type” on page 27.
name	Name of an item of type type for which license usage is included.
group_name	Name of the group to include.

*INCLUDE\_ENTITLEMENT terms*

To include the user claire in the list of users able to activate licenses provided in the fulfillment record specified by the entitlement Id AB456:

```
INCLUDE_ENTITLEMENT AB456 USER claire
```

**NOLOG**

```
NOLOG { IN | OUT | DENIED | QUEUED }
```

Suppresses logging for the selected type of event in the debug log file.

To turn off logging of check-ins:

```
NOLOG IN
```

Two separate NOLOG lines are required to turn off logging of check-outs and queued requests.

To turn off logging of check-outs and queued requests:

```
NOLOG DENIED
```

**Note:** License administrators use this option to reduce the size of the debug log file. However, it can reduce the usefulness of the debug log in debugging license server system problems.

For more information, see “lmswitch” on page 25.

**REPORTLOG**

```
REPORTLOG [+]report_log_path
```

REPORTLOG specifies the report log file for the adobe daemon. It is recommended preceding the `report_log_path` with a + character to append logging entries; otherwise, the file is overwritten each time the daemon is started.

On Windows, pathnames that include spaces have to be enclosed in double quotes. If `lmgrd` is started as a service, the default location for the report log file is the `c:\winnt\System32` folder unless a fully qualified path is specified.

# Appendix B: Troubleshooting

## General troubleshooting tips

### Using a local log file

When you start the license server system, be sure that you direct the output into a local log file where you can examine it. The log file often contains useful information. Examine it when you have a problem, and be prepared to answer questions about it when you talk to a support person.

### Running `lmstat -a` and `lmdiag`

If the license server system appears to have started correctly (which you can determine from the log file), try running `lmstat -a` and `lmdiag` to see if that program has the same problem as your application.

### Preparing for support questions

When you talk to a support person, be prepared with answers to the following questions:

- What kind of machine is your license server system running on?
- What version of the operating system?
- What machine and operating system is the application running on?
- What version of Adobe Licensing does the ALM-enabled desktop product use?  
Use the `lmver` script, or on Mac OS X, execute the following command on your `lmgrd`, `vendor daemon`, and application:  

```
strings binary_name | grep Copy
```

  
Alternatively, `lmgrd -v` gives the `lmgrd` version, and this works with the adobe daemon also.
- What error or warning messages appear in the log file?
- Did the server start correctly?  
Look for a message such as:  

```
server xyz started for: feature1 feature2.
```
- What is the output from running `lmstat -a`?
- Are you running other ALM-enabled products?
- Are you using a combined license file or separate license files?

## Error code formats

Adobe Licensing error messages contain several components:

**Adobe Licensing Error Number** A negative number starting at -1.

**FLEXlm Error Text** A short sentence (< 80 characters) summarizing problem.

**FLEXlm Licensing Error Explanation (optional)** A short paragraph (3 to 5 lines) explaining problem and possible solutions or workarounds.

**FLEX Licensing Minor Error Number** A positive number starting at 1. These numbers are unique error identifiers and are used by Adobe Licensing vendors for more advanced support assistance. Their meaning is not documented.

**System Error Number (optional)** A Mac OS X or Windows error code last set by the operating system.

**System Error Explanation (optional)** A short sentence (< 80 characters) explaining the system error.

**Other (optional)** Other supporting information.

### Format 1 (short)

FLEXlm error text (-*lm\_errno*, *minor\_num*[:*sys\_errno*]) [*sys\_error\_text*]

The system error information may be missing.

Example:

Can't connect to license server system (-15,12:61) Connection refused

### Format 2

FLEXlm error text

FLEXlm error explanation

[Optional Supporting information]

FLEXlm error: -*lm\_errno*, *minor\_num*. [System Error: *sys\_errno*] [*system\_error\_text*]

Example:

Cannot connect to license server system  
The server (lmgrd) has not been started yet, or  
the wrong port@host or license file is being used, or the  
port or hostname in the license file has been changed.

Feature: f1

Server name: localhost

License path: @localhost:license.dat:/\*.lic

FLEXlm error: -15,12. System Error: 61 "Connection refused"

## Error code descriptions

### Adobe licensing error code descriptions

The following table lists the most common Adobe Licensing errors:

Error	Description
-1	Cannot find license file.
-2	Invalid license file syntax.
-3	No license server system for this feature.
-4	Licensed number of users already reached.

Error	Description
-5	No such feature exists.
-6	No TCP/IP port number in license file and FLEXnet Licensing service does not exist. (pre-v6 only)
-7	No socket connection to license server manager service.
-8	The license key/signature and data for the feature do not match. This usually happens when a license file has been altered.
-9	Invalid host. The hostid of this system does not match the hostid specified in the license file.
-10	Feature has expired.
-11	Invalid date format in license file.
-12	Invalid returned data from license server system.
-13	No SERVER lines in license file.
-14	Cannot find SERVER host name in network database. The lookup for the host name on the SERVER line in the license file failed. This often happens when NIS or DNS or the hosts file is incorrect. Workaround: Use IP address (for example, 123.456.789.123) instead of host name.
-15	Cannot connect to license server system. The server (lmgxrd) has not been started yet, or the wrong port@host or license file is being used, or the TCP/IP port or host name in the license file has been changed.
-16	Cannot read data from license server system.
-17	Cannot write data to license server system.
-18	License server system does not support this feature.
-19	Error in select system call.
-21	License file does not support this version.
-22	Feature check-in failure detected at license server system.
-23	License server system temporarily busy (new server connecting).
-24	Users are queued for this feature.
-25	License server system does not support this version of this feature.
-26	Request for more licenses than this feature supports.
-29	Cannot find Ethernet device.
-30	Cannot read license file.
-31	Feature start date is in the future.
-32	No such attribute.
-33	Bad encryption handshake with vendor daemon.
-34	Clock difference too large between client and license server system.
-35	In the queue for this feature.
-36	Feature database corrupted in vendor daemon.
-37	Duplicate selection mismatch for this feature. Obsolete with v8.0+ vendor daemon.
-38	User/host on EXCLUDE list for feature.
-39	User/host not on INCLUDE list for feature.

Error	Description
-40	Cannot allocate dynamic memory.
-41	Feature was never checked out.
-42	Invalid parameter.
-47	Clock setting check not available in vendor daemon.
-52	Vendor daemon did not respond within timeout interval.
-53	Checkout request rejected by vendor-defined checkout filter.
-54	No FEATURESET line in license file.
-55	Incorrect FEATURESET line in license file.
-56	Cannot compute FEATURESET data from license file.
-57	1 socket() call failed.
-59	Message checksum failure.
-60	License server system message checksum failure.
-61	Cannot read license file data from license server system.
-62	Network software (TCP/IP) not available.
-63	You are not a license administrator.
-64	Imremove request before the minimum Imremove interval.
-67	No licenses available to borrow.
-68	License BORROW support not enabled.
-69	FLOAT_OK can't run stand-alone on license server system.
-71	Invalid TZ environment variable.
-73	Local check-out filter rejected request.
-74	Attempt to read beyond end of license file path.
-75	1 SYSSSETIMR call failed (VMS).
-76	Internal Adobe Licensing error—please report to Adobe.
-77	Bad version number must be floating-point number with no letters.
-82	Invalid PACKAGE line in license file.
-83	Adobe Licensing version of client newer than server.
-84	USER_BASED license has no specified users - see license server system log.
-85	License server system doesn't support this request.
-87	Check-out exceeds MAX specified in options file.
-88	System clock has been set back.
-89	This platform not authorized by license.
-90	Future license file format or misspelling in license file. The file was issued for a later version of Adobe Licensing than this program understands.

Error	Description
-91	Encryption seeds are non-unique.
-92	Feature removed during <code>lmreread</code> , or wrong SERVER line hostid.
-93	This feature is available in a different license pool. This is a warning condition. The server has pooled one or more INCREMENT lines into a single pool, and the request was made on an INCREMENT line that has been pooled.
-94	Attempt to generate license with incompatible attributes.
-95	Network connect to THIS_HOST failed. Change this_host on the SERVER line in the license file to the actual host name.
-96	License server machine is down or not responding. See the system administrator about starting the server, or make sure that you're referring to the right host (see LM_LICENSE_FILE environment variable).
-97	The desired vendor daemon is down. 1) Check the lmgrd log file, or 2) Try <code>lmreread</code> .
-98	This FEATURE line can't be converted to decimal format.
-99	The decimal format license is typed incorrectly.
-100	Cannot remove a linger license.
-101	All licenses are reserved for others. The system administrator has reserved all the licenses for others. Reservations are made in the options file. The server must be restarted for changes to take effect.
-102	An Adobe borrow error occurred.
-103	Terminal Server remote client not allowed.
-104	Cannot borrow that long.
-106	License server system out of network connections. The vendor daemon can't handle any more users. See the debug log for further information.
-110	Cannot read dongle: check dongle or driver. Either the dongle is unattached, or the necessary software driver for this dongle type is not installed.
-112	Missing dongle driver. In order to read the FLEXid hostid, the correct driver must be installed. These drivers are available from your software vendor.
-114	SIGN= keyword required, but missing from license certificate. You need to obtain a SIGN= version of this license from your vendor.
-115	Error in Public Key package.
-116	TRL not supported for this platform.
-117	BORROW failed.
-118	BORROW period expired.
-119	<code>lmdown</code> and <code>lmreread</code> must be run on license server machine.
-120	Cannot <code>lmdown</code> the server when licenses are borrowed.
-121	FLOAT_OK requires exactly one FLEXid hostid.
-122	Unable to delete local borrow info.
-123	Returning a borrowed license early is not supported. Contact the vendor for further details.
-124	Error returning borrowed license.
-125	A PACKAGE component must be specified.
-126	Composite hostid not initialized.

Error	Description
-127	A item needed for the composite hostid is missing or invalid.
-128	Error, borrowed license doesn't match any known server license.
-135	Error enabling the event log.
-136	Event logging is disabled.
-137	Error writing to the event log.
-139	Communications time-out.
-140	Bad message command.
-141	Error writing to socket. Peer has closed socket.
-142	Error, cannot generate version-specific license tied to a single hostid, which is composite.
-143	Version-specific signatures are not supported for uncounted licenses.
-144	License template contains redundant signature specifiers.
-145	Bad V71_LK signature.
-146	Bad V71_SIGN signature.
-147	Bad V80_LK signature.
-148	Bad V80_SIGN signature.
-149	Bad V81_LK signature.
-150	Bad V81_SIGN signature.
-151	Bad V81_SIGN2 signature.
-152	Bad V84_LK signature.
-153	Bad V84_SIGN signature.
-154	Bad V84_SIGN2 signature.
-155	License key required but missing from the license certificate. The application requires a license key in the license certificate. You need to obtain a license key version of this certificate from your vendor.
-500	Invalid server port number.
-501	Invalid value in license where an integer was expected.
-502	Invalid value supplied for count.
-503	Invalid hostid supplied in license.
-504	Invalid hostid type supplied.
-505	Bad feature line syntax.
-506	Internal FLEXnet Licensing error.
-507	Bad date format in license file.
-508	Bad SERVER line.
-509	Bad license string.
-510	Server's feature doesn't authenticate on client side.



Error	Description
-511	No license checked out.
-512	License already checked out.
-513	Error list returned.
-514	No certicom module available.
-515	Wrong or incomplete certicom module.
-516	SIGN or SIGN2 required in license certificate.
-517	Feature object has no licensesources.
-518	An Identical license is already checked out on this license source.
-519	This license has an asynchronously queued check-out pending.
-521	Library for native hostid couldn't be loaded.
-522	Already connected to another vendor daemon.
-523	No such user, host, or display.
-524	Shutdown of license server system failed.
-525	Shutdown failed — already connected to license server system.
-526	Invalid license source string.
-527	Log file switch error.

## License Server Charging Utility error code descriptions

The following table lists the most common License Server Charging Utility errors:

Error	Description
0	An error has occurred, License Server Charging Utility cannot continue.
1	An invalid parameter caused an error, License Server Charging Utility cannot continue.
2	License Server Charging Utility cannot continue due to insufficient memory.
3	An internal fatal error occurred. License Server Charging Utility cannot continue.
4	An internal fatal error occurred. License Server Charging Utility cannot continue.
5	License Server Charging Utility cannot create licensing environment. Please reinstall the application and try again.
6	An invalid parameter caused an error. License Server Charging Utility cannot complete the retrieval process.
7	An invalid parameter caused an error. License Server Charging Utility cannot complete the upload process.
8	An invalid parameter caused an error. License Server Charging Utility cannot complete the repair process.
9	An error occurred. License Server Charging Utility failed to delete the record.
10	License Server Charging Utility failed to find the selected fulfillment record.
11	Corrupted license records caused a serious error.
12	An invalid parameter caused a serious error. License Server Charging Utility cannot continue.
13	A serious error occurred. License Server Charging Utility cannot continue.

Error	Description
14	A serious error occurred. License Server Charging Utility cannot continue.
15	License Server Charging Utility is unable to communicate with the Adobe server. Please reinstall License Server Charging Utility and try again.
16	License Server Charging Utility is unable to communicate with the Adobe server. Please reinstall License Server Charging Utility and try again.
17	License Server Charging Utility is unable to communicate with the Adobe server. Please reinstall License Server Charging Utility and try again.
18	An error occurred. License Server Charging Utility cannot continue.
19	An error occurred. License Server Charging Utility cannot continue.
20	An error occurred. License Server Charging Utility cannot continue.
21	An error occurred. License Server Charging Utility cannot continue.
22	An error occurred. License Server Charging Utility cannot continue.
23	An error occurred. License Server Charging Utility cannot continue.
24	An error occurred. License Server Charging Utility cannot continue.
25	An error occurred. License Server Charging Utility cannot continue.
26	An error occurred. License Server Charging Utility cannot continue.
27	An error occurred. License Server Charging Utility cannot continue.
28	License Server Charging Utility was unable to communicate with the Adobe server due to a time-out. Please try again.
29	The Adobe server did not have enough licenses to satisfy the retrieval request. Please contact Adobe Technical Support.
30	License Server Charging Utility is unable to communicate with the Adobe server. Please try again.
31	License Server Charging Utility failed to find the selected fulfillment record.
32	License Server Charging Utility failed to communicate with the Adobe server. Please try again.
33	License Server Charging Utility is unable to communicate with the Adobe server. Please reinstall License Server Charging Utility and try again.
34	The Adobe server rejected the return request because License Server Charging Utility tried to return more licenses than it originally retrieved. Please contact Adobe technical support.
35	License Server Charging Utility cannot repair the license. Please contact Adobe Technical Support.
36	Adobe Server returned error: %s
37	License Server Charging Utility could not retrieve e-licenses. Please check your network connections and try again.
38	License Server Charging Utility is unable to communicate with the Adobe server. Please reinstall License Server Charging Utility and try again. If reinstalling does not fix the problem, contact Adobe Technical Support.
39	License Server Charging Utility cannot return e-licenses to the Adobe server because some of the e-licenses are activated. Please contact Adobe Technical Support.
201	License Server Charging Utility failed to locate the Adobe server in the installed path. Please reinstall License Server Charging Utility and try again.
202	License Server Charging Utility cannot create the licensing environment. Please reinstall the application and try again.
203	License Server Charging Utility cannot continue because it requires administrative rights on this computer.
204	License Server Charging Utility failed to setup the licensing environment. Please reinstall the application and try again.

Error	Description
205	License Server Charging Utility cannot read the e-license setup file. Either the file is locked, or it does not have read access permissions.
-1	The Adobe server failed to process the return or repair because there are no current retrievals for the requested machine.
-2	The Adobe server detected too many retrievals or repairs.
-4	The Adobe server cannot process the invalid request.
-5	The Adobe server does not support this e-license.
-6	The Adobe server failed to serve this request.
-7	The Adobe server failed to serve this request.
-8	The Adobe server does not support this e-license.
-9	Service is not available at the Adobe server.
-10	Service is not available at the Adobe server.
-11	Service is not available at the Adobe server.
-12	The Adobe server failed to serve this request.
-13	The Adobe server failed to serve this request.
-15	The Adobe server failed to serve this request.
-20	The Adobe server failed to find the order for the e-license. Please contact Adobe Technical Support.
-21	The Adobe server failed to serve this request.
-22	The Adobe server failed to serve this request.

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